

Title (en)

Improvements in and relating to carrier particles for use in dry powder inhalers

Title (de)

Verbesserung in Verbindung mit Trägerpartikeln zur Verwendung in Trockenpulverinhalatoren

Title (fr)

Améliorations se rapportant à des particules porteuses utilisées dans des inhalateurs à poudre sèche

Publication

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Application

EP 06004066 A 19960131

Priority

- EP 02007397 A 19960131
- EP 96901439 A 19960131
- GB 9521937 A 19951026
- GB 9501841 A 19950131

Abstract (en)

A powder for use in a dry powder inhaler includes active particles and carrier particles for carrying the active particles. The powder further includes additive material (4) on the surfaces of the carrier particles to promote the release of the active particles from the carrier particles on actuation of the inhaler. The powder is such that the active particles are not liable to be released from the carrier particles before actuation of the inhaler. The inclusion of additive material (4) in the powder has been found to give an increased respirable fraction of the active material.

IPC 8 full level

A61K 9/00 (2006.01); **A61K 9/12** (2006.01); **A61K 9/14** (2006.01); **A61K 9/72** (2006.01)

IPC 8 main group level

A61K (2006.01)

CPC (source: EP KR US)

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Citation (applicant)

- WO 8705213 A1 19870911 - CHIESI FARMA SPA [IT]
- GB 2269992 A 19940302 - RH NE POULENC RORER LIMITED [GB]
- WO 9500127 A1 19950105 - ASTRA AB [SE]
- NUHA KASSEM, PHD THESIS, 1990

Citation (third parties)

Third party :

- WO 8705213 A1 19870911 - CHIESI FARMA SPA [IT]
- GB 2269992 A 19940302 - RH NE POULENC RORER LIMITED [GB]
- WO 9511666 A1 19950504 - CO ORDINATED DRUG DEV LTD [GB], et al
- WO 9500127 A1 19950105 - ASTRA AB [SE]
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- GB 1242211 A 19710811 - FISONS PHARMACEUTICALS LTD
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- GANDERTON D.: "The Generation of Respirable Clouds Form Coarse Powder Aggregates", JOURNAL OF BIOPHARMACEUTICAL SCIENCES, vol. 3, no. 1-2, 1992, pages 101 - 105, XP009099037
- STANIFORTH J.N. ET AL: "Interparticle forces in binary and ternary ordered powder mixes", J. PHARM. PHARMACOL., vol. 34, 1982, pages 141 - 145, XP003030932

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WO 9623485 A1 19960808; AT E256450 T1 20040115; AT E355822 T1 20070315; AT E526946 T1 20111015; AU 4545696 A 19960821; AU 699131 B2 19981126; BG 101858 A 19980430; BR 9607490 A 20180417; BR 9607490 B8 20180417; BR 9612950 B1 20110823; BR PI9612950 B1 20110823; BR PI9612950 B8 20180417; CA 2211874 A1 19960808; CA 2211874 C 20060829; CN 1179097 A 19980415; CN 1303974 C 20070314; CZ 244397 A3 19980114; CZ 294259 B6 20041110; DE 69631119 D1 20040129; DE 69631119 T2 20040916; DE 69636961 D1 20070419; DE 69636961 T2 20070614; DK 0806938 T3 20040413; DK 1232745 T3 20070709; DK 1666023 T3 20120130; EA 000352 B1 19990429; EA 199700153 A1 19971230; EE 9700176 A 19980216; EP 0806938 A1 19971119; EP 0806938 B1 20031217; EP 1159955 A1 20011205; EP 1232745 A1 20020821; EP 1232745 B1 20070307; EP 1666023 A2 20060607; EP 1666023 A3 20090506; EP 1666023 B1 20111005; EP 2213279 A2 20100804; EP 2213279 A3 20101013; EP 2258342 A2 20101208; EP 2258342 A3 20140108; ES 2213172 T3 20040816; ES 2278828 T3 20070816; ES 2375007 T3 20120224; FI 119676 B 20090213; FI 973151 A0 19970730; FI 973151 A 19970930; GB 9501841 D0 19950322; GB 9521937 D0 19960103; GE P19991687 B 19990805; HK 1084897 A1 20060811; HU 229965 B1 20150330; HU P9802209 A2 19990201; HU P9802209 A3 20000628; IS 4531 A 19970725; JP 4042867 B2 20080206; JP H10513174 A 19981215; KR 100500694 B1 20060322; KR 19980701844 A 19980625; MX 9705847 A 19980830; NO 324037 B1 20070730; NO 973502 D0 19970730; NO 973502 L 19970930; NZ 300654 A 19990225; PL 186757 B1 20040227; PL 321572 A1 19971208; PT 1232745 E 20070430; PT 1666023 E 20120112; PT 806938 E 20040531; SI 1232745 T1 20070630; SI 1666023 T1 20120131; SK 103697 A3 19980114; SK 282630 B6 20021008; TR 199700722 T1 19980221; UA 61051 C2 20031117; US 2003170183 A1 20030911; US 2006029552 A1 20060209; US 2010330188 A1 20101230; US 6153224 A 20001128; US 6521260 B1 20030218; US 7011818 B2 20060314; US 7718163 B2 20100518; US 8920781 B2 20141230; ZA 96721 B 19960819

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